

*Papers read before the Society from March 1889 to
February 1890.*

1889.

- March 8. On the satellite of *Venus* and its revolution. Professor C. V. Zenger.
 On a graphical method for determining the orbit of a binary star. Professor S. Glasenapp.
 Discovery of comet Brooks (*a* 1889). W. R. Brooks.
 Observations of phenomena of *Jupiter's* satellites, made at Windsor, New South Wales, in the year 1888. John Tebbutt.
 Observations of the variable star S (10) *Sagittæ*. J. E. Gore.
 Observations of the planet *Iris* and comparison stars made with the meridian circle at Dunsink. A. A. Rambaut.
 Photographic analysis of the great nebula M 42 and 43 and *h* 1180 in *Orion*. Isaac Roberts.
 Preuves de la Nutation diurne: mode d'observation propre à la mettre en évidence en une seule soirée. Professor F. Folie.
 Observations of comet *f* 1888 (Barnard) made at Stonyhurst College Observatory. Rev. W. J. Crofton.
 A new pair-mirror equatoreal arrangement. Rev. A. Freeman.
 On the determination of normal places. Lieut.-Gen. J. F. Tennant.
 On the orbit of comet I. 1888 (Sawerthal). Lieut.-Gen. J. F. Tennant.
 Observations of comet Barnard (September 2, 1888), and comet Barnard (October 30, 1888), made at the Radcliffe Observatory, Oxford. Communicated by E. J. Stone.
 Note on a red star. E. J. Stone.
 The Greenwich standard right ascensions for 1880. A. M. W. Downing.
 Spectroscopic observations of sundry stars and comets made at the Royal Observatory, Greenwich, chiefly in the years 1887 and 1888. E. W. Maunder.

- On the value of a scale of density on a photograph.
Captain W. de W. Abney.
- Note on the law of increase in diameter of star discs on
stellar photographs with duration of exposure. H. H.
Turner.
- Note on the spectrum of the great nebula in *Orion*.
E. W. Maunder.
- April 12. On an error in Brünnow's formulæ for differential re-
fraction in distance and position angle. W. H.
Finlay.
- Observations of comets made at the Orwell Park Ob-
servatory in the years 1888-89. J. I. Plummer.
- The trapezium of *Orion*. S. W. Burnham.
- Probable errors of Greenwich determinations of right
ascension at different zenith distances. A. M. W.
Downing.
- On the proper motion of 85 *Pegasi*. J. E. Gore.
- On the photographs of the corona at the solar eclipse
of January 1, 1889. Professor E. S. Holden.
- Photographs of the nebulae M 81, 82, and a nebulous
star in *Ursa Major*. Isaac Roberts.
- A catalogue of the stars of the IV. type. Rev. T. E.
Espin.
- Note on an error in Le Verrier's "Tables du Soleil."
R. T. A. Innes.
- On a method of supporting a large mirror when silver-
ing. Edward Crossley.
- May 10. Photographs of the nebula M 51 *Canum Venaticorum*.
Isaac Roberts.
- Mean areas and heliographic latitudes of Sun-spots,
1874 to 1888, deduced from photographs taken at
Greenwich, at Dehra Dûn, India, and at Mauritius.
Communicated by the Astronomer Royal.
- Parallel photographs of the spectra of the Sun, of iron,
and of iridium, from H to near D; also separate pho-
tographs of the spectrum of titanite iron ore. F.
Maclean.
- Ephemeris for physical observations of the Moon.
A. Marth.
- Observations of the planet *Iris* and comparison stars
made with the transit circle of the Radcliffe Observa-
tory, Oxford, during the opposition of 1888. Com-
municated by E. J. Stone.
- Observations of Terby's white spot on *Saturn's* ring.
A. A. Common.
- June 14. On the orbit of *Sirius*. J. E. Gore.
- Note on the nebulous star in Mr. Roberts's photograph
of 81 and 82 Messier *Ursæ Majoris*. Herbert Ingall.
- Photographs and drawings of the Sun. Rev. S. J.
Perry.

- Comparison of the spectrum between C and D of a Sun-spot observed May 27, 1884, with another of May 7, 1889. Rev. S. J. Perry and Rev. A. L. Cortie.
- Observations of the spectrum of *Uranus*. A. Taylor.
- Nov. 8. On the close conjunction of *Mars* and *Saturn* near *Regulus*, September 19, 1889. A. Marth.
- On the eclipse of *Iapetus* by *Saturn* and its ring system, November 1-2, 1889. A. Marth.
- The photographic spectrum of the nebula of *Orion*. (Extract from a letter to Mr. Knobel.) Dr. W. Huggins.
- The spectra of *Uranus* and *Saturn*. Dr. W. Huggins. (Extract from a letter to Mr. Knobel.)
- The nebula G. C. 2091. E. E. Barnard.
- Discussion of the observations of the Sun made with the Washington transit circle during the years 1875-83, inclusive. A. M. W. Downing.
- Ephemeris of the satellites of *Saturn*, 1889-90. A. Marth.
- Suggestions as to a new general catalogue of stars. G. F. Chambers.
- Ephemeris of the satellite of *Neptune*, 1889-90. A. Marth.
- Catalogue of 918 radiant points of shooting stars observed at Bristol. W. F. Denning.
- Catalogue of bright meteors observed at Bristol during the years 1877 to 1889 inclusive. W. F. Denning.
- Preliminary spectroscopic survey of southern stars made at the Melbourne Observatory with a Maclean direct-vision spectroscope on the 8-inch equatoreal. Communicated by R. L. J. Ellery.
- Observations of comets *d* 1889 (Brooks) and *e* 1889 (Davidson) made at the Royal Observatory, Greenwich. Communicated by the Astronomer Royal.
- On some of the features of the arrangement of stars in space. Professor E. S. Holden.
- Conjunction of *Mars* and *Saturn*, September 20, 1889. Major S. H. Maxwell.
- Observations of comet *e* 1889 (Davidson) made at the Melbourne Observatory with the South equatoreal and dark field micrometer. Communicated by R. L. J. Ellery.
- On the proper motion of the double star South 503. J. E. Gore.
- Observations of comet *e* 1889 (Davidson) made at the Sydney Observatory with the 11½-inch equatoreal and filar micrometer. Communicated by H. C. Russell.
- Note to accompany a drawing of the Milky Way. Dr. O. Boeddicker.
- The colours of stars. F. W. Levander.
- Results of double star measures at Windsor, New South

- Wales, during the years 1886, 1887, and 1888. John Tebbutt.
- The orbit of comet III., 1888. Lieut.-Gen. J. F. Tennant.
- Occultation of *Jupiter* by the Moon, August 7, 1889, observed at Forest Lodge, Maresfield. Captain W. Noble.
- Note on solar spots in high south latitudes. Rev. S. J. Perry.
- Discussion of Greenwich north polar distances of *Polaris* and other stars, with reference to corrections for temperature and humidity. W. G. Thackeray.
- Note on the bright line spectra of R *Andromedæ* and R *Cygni*, and on the suspected bright lines in R *Cassiopeie*, and on the spectrum of W. *Cygni*. Rev. T. E. Espin.
- Ephemerides of the satellites of *Saturn*, 1889-90 (conclusion). A. Marth.
- Note on the determination of stellar parallax by the aid of photography. Professor C. Pritchard.
- Occultation of the planet *Jupiter* and its satellites by the Moon, August 7, 1889, observed at the Radcliffe Observatory, Oxford. E. J. Stone.
- Observations of *Mars* and *Saturn* at their conjunction, September 19, 1889, made at the Royal Observatory, Greenwich. E. W. Maunder.
- Brooks's Comet. J. I. Plummer.
- Dec. 13. Areas of faculæ and Sun-spots, compared with diurnal ranges of magnetic declination, horizontal force, and vertical force, as observed at the Royal Observatory, Greenwich, in the years 1873 to 1888. Communicated by the Astronomer Royal.
- Mean daily area of Sun-spots for each degree of solar latitude for each year from 1874 to 1888 as measured on photographs taken at the Royal Observatory, Greenwich. Communicated by the Astronomer Royal.
- Observations of occultations of *Jupiter* by the Moon, August 7, 1889, made at the Royal Observatory, Greenwich. Communicated by the Astronomer Royal.
- The late occultation of *Jupiter*. Rev. S. J. Johnson.
- On the orbit of Struve 228. J. E. Gore.
- Spectra of southern stars observed at the Melbourne Observatory with the Maclean direct-vision spectro-scope, attached to the South equatoreal. No. II. Communicated by R. L. J. Ellery.
- Spectroscopic observations of the motions of stars in the line of sight, made at the Temple Observatory, Rugby. G. M. Seabroke.

- Ephemeris for physical observations of the Moon,
January 1 to July 1, 1890. A. Marth.
Note on the spectrum of the Sun-spot of June, 1889.
Rev. A. L. Cortie.
A method of recording the transits of stars by photo-
graphy. W. E. Wilson.

1890

- Jan. 10. The photographic apparatus of the great equatoreal of
the Lick Observatory. Professor E. S. Holden.
Observations of the eclipse of *Iapetus* in the shadows of
the globe, crape ring, and bright ring of *Saturn*,
November 1, 1889. E. E. Barnard.
Observations of occultations of stars by the Moon, and
phenomena of *Jupiter's* satellites made at the Royal
Observatory, Greenwich, in the year 1889. Com-
municated by the Astronomer Royal.
Ephemeris for physical observations of *Mars*, 1890.
A. Marth.
Ephemeris of the satellites of *Uranus*, 1890. A. Marth.
Ephemeris of the satellites of *Mars*, 1890. A. Marth.
The structure of the sidereal universe. T. W. Back-
house.
Spectroscopic results for the motions of stars in the line
of sight obtained at the Royal Observatory, Green-
wich, in the year 1889. No. XIII. Communicated
by the Astronomer Royal.